HAFFERMAN ENGINEERING, INC.

December 30, 2021

Flathead County Planning & Zoning
40 11th Street West, Suite 220
Kalispell, Montana 59901

Re: Application for Lake and Lakeshore Construction Permit Major Variance:

Dear Flathead County Planning & Zoning,

The as you are aware the Montana Department of Fish Wildlife and Parks (DFWP) Outdoor Recreation Division has taken over ownership of the former Sliter Family property associated to the shoreline design and approvals permitted by the Flathead County Commissioners on August 19, 2019, under permit FLV-19-02. As you are aware the permit was to create a 55-acre recreation area with 0.4 miles of shoreline and public access to the North Shore of Flathead Lake in Somers. Lastly, as you are aware, the permits have expired.

The DFWP has engaged Kurtis Hafferman, P.E. from Hafferman Engineering Inc. (HEI) and Dr. Mark Lorang of Freshwater Map to obtain the permits a second time. The scope of work and the plan to create a public recreational access to Flathead Lake have not changed since the original permits were approved. The DFWP intends to construct the project as permitted in August of 2019. HEI is hereby resubmitting the Application for Lake and Lakeshore Construction Permit which is attached in Appendix 1 to this letter. Included with the Application in Appendix 1 is the same Dr. Lorang report titled, Wetland Restoration Using A Dynamic Gravel Beach System: Completing The North Shore, Report and Design by Dr. Mark Lorang(Report). The appended Report remains the primary basis for the request and contains the requested submittalsincluding the plans, fill quantity calculations, cross sections, location mapping, site descriptions and justifications for the project.

The site is still subject to continued shoreline erosion therefore the DFWP has engaged Dr. Lorang to construct the dynamic gravel beach system that will place a graded gravel fill below the average high water elevation to stop full pool wave erosion and at the same time create a gravel beach that is acceptable for public use. This project continues to be designed to avoid disturbance or placement of fill in the wetland area delineated on the North Shore. The gravel fill will be confined to the exposed lakebed to create a gravel beach that is acceptable for public use.

The project still requires the placement of 600 CY of 3" to 6" minus drain rock on 200 ft. of lake shore in Section1 of the project and placing 3,385 CY of 2" minus pit run on 1,785 ft. of lake shore in Sections 2 to 5. The process to move the gravel will still use a fully tracked truck that will travel on the exposed lakebed during low water to haul the material to the beach sections where they can end-dump the material.

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An excavator will be used to place the gravel on the shoreline sloping out into and onto the exposed lakebed.Gravel encroachment onto the exposed lakebed is not planned to exceed 20 ft. out from the average high water. Once placed, the gravel material is intended to be washed by wave action when water is above theaverage low water and up to average high water elevation, creating the dynamic gravel beach.

A variance from Flathead County Lake and Lakeshore Protection Regulations is requested to construct the dynamic gravel beaches at the site because the project will use gravel materials that are not completely free of fine material, the maximum fill depth will be more than four to six inches and the volume of fill will exceed one cubic yard per sixteen lineal feet of lake frontage. The variance justification for the dynamic gravel beach at the site is as follows.

1. Current Flathead County Lake and Lakeshore Protection Regulations Flathead County, Montana, state in Chapter 4 Criteria for Issuance of a Permit, section 4.1.C.2.c. Any materials used for fill shall be free of fine materials (i.e., clays, silts, and sands), unless the material is placed behind a retaining wall which will prevent introduction of the materials into the lake. A variance is justified from this standard.
    a. As described in the attached report, a mixture of gravels and sand will be placed on the lakebed fronting the full pool shoreline. The silts and sands in the pit run gravel is necessary to combine with the depositional peat and logs to create a substrate that will allow recolonization with a variety of grasses, and other herbaceous plants and shrubs.[1]
        i. Approximately 30 root-wads with 20 ft stems will also be placed in strategic locations to create a complex shoreline necessary to minimize the mechanisms associated with the longshore transport of gravel. Minimizing longshore transport of gravel will assist in creating the depositional silts, sands, and peat.
    b. This process is demonstrated by the gravel beaches constructed on the federal lands of the USFWS Waterfowl Protection Area.
    c. The variance is justified because this method of shoreline restoration and erosion control has been used extensively and successfully along the north shore of Flathead Lake (Lorang 2017, 2016, 2014, 2007, 2006) and up to the current date with the recent approval of a variance for a similar type of project (Advanced Consulting Services, LLC/Keenan 2019).

    Current Flathead County Lake and Lakeshore Protection Regulations Flathead County, Montana, in Chapter 4 Criteria for Issuance of a Permit, section 4.1.D. (1) Erosion, Sedimentation and Storm Runoff state the application of rock is allowed where the predominant existing surface is gravel and (2) application of rock is not permitted at sites subject to strong wave action below average low water, (5) the maximum fill depth is four to six inches and (6) the volume of fill shall not exceed one cubic yard per sixteen lineal feet of lake frontage. On this project strong wave action is anticipated. On this project the average fill depth is 2 ft. and maximum are approximately 3 ft. The volume of fill in Section 1 requires 48 CY per 16 ft and Sections 2 to 5 requires 30.3 CY per 16 ft. A variance is justified from these standards as follows.

[1] Report, page 16, *Shore-Attached Gravel beach*

d. The justification for placement of rock subject to strong wave action below the low water mark, the depth of gravel and the volume of fill per foot characterize the dynamic gravel beach as described in the attached report.
e. The variance is justified because building gravel beaches as shore protection structures with similar dimensions, depths and volumes has been a permissible and accepted approach to the problem of shoreline erosion in Flathead Lake north shore beginning in 1989 when the first perched-gravel beach was built in the lake (Lorang 1991) and up to the current date with the recent approval of a variance for a similar type of project (Advanced Consulting Services, LLC/Keenan 2019).
f. Approximately 2.5 miles of eroding shoreline composing the USFWS Waterfowl Protection Area on the north shore of the lake has been stabilized by building gravel beaches with similar dimensions, depths, and volumes. These shorelines are now dynamically stable and undergoing a natural restoration and revegetation. This project will use the same process to create new aquatic and riparian vegetation to recolonize the area associated with the beaches and creating a living shoreline solution to the erosion problem.
g. The Confederated Salish and Kootenai tribes have adopted this approach with their shoreline erosion problems at Salish Point in Polson and along the Blue Bay campground shoreline using similar dimensions depths and volumes (Lorang 2003 and 2006). Both projects are popular public recreational beaches that also serve the purpose of providing a natural landscape (beach) transition from the lake environment to the terrestrial or wetland fringing shoreline.[2]

Previously the Sliter family had worked diligently with agencies and neighbors to ready the property for transition to a public access site. The Sliter Family completed their goal when they transferred the property to the DFWP. The DFWP now requests permit approval to complete the project as previously permitted with the same intent to stop the continual and increased lakeshore erosion and sedimentation and to benefit the public by completing the project to create the gravel beach area and prepare the site for public access.

The Sliter family, their neighbors and the DFWP recognize that the existing Somers area public access off Highway 93 is notably overcrowded with the launching of motorized boats that are in direct competition with other recreational activities. Once transitioned to public access, the project is intended to spread out the usable area and allow a safer access for other recreational activities away from the highway; shoreline stabilization and building the dynamic gravel beach is the necessary first step in this process and your assistance in obtaining this permit is requested.

It is recognized that the north shore of Flathead Lake does have an area of public land that is part of the Flathead Lake Waterfowl Production Area, but the area is closed to human use between March and July each year for protection of the migrating and nesting birds. This project proposes to allow public access to Flathead Lake year-round. Between the highway boat access, the waterfowl production access and this project, there is the potential to vastly increase outdoor recreational activities for the residents and guests of the whole Flathead Valley and our future generations.

[2] Ibid page 1- 2, *Background*

Cleanup of the former BNSF railroad tie treating plant and the portions of BNSF property that abut the DFWP property has been, and continues to be, implemented under the direction of the Environmental Protection Agency (EPA). The EPA and BNSF have indicated that the DFWP project is consistent with the potential future use of the BNSF property near this project site.

HEI and Dr. Lorang are hopeful that this project can be permitted in a timeframe that will allow work to begin this winter and spring as the project needs to be constructed during the minimum pool elevation and is planned to only take two weeks to complete.

Please feel free to contact me if you have any questions or comments.

Respectfully,
Hafferman Engineering Inc

Kurtis M. Hafferman, P.E. President

Cc; Dr. Mark Lorang
Randi Rognlie, Project Manager, Design and Construction Section, DFWP

Enclosures; Lake and Lakeshore Construction Permit
Report: Wetland Restoration Using A Dynamic Gravel Beach System

Appendix 1

Application for a Lake and Lakeshore Construction Permit Major Variance